1x2 /2x2 Large Fiber Core 400µm Coupler/Splitter

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The FC Series fiber optic coupler is based on fused biconical taper technology and compact packaging structure. It features good uniformity, low excess loss and very low polarization sensitivity. The device is ideal for splitting or combining light with exceptional performance over a wide wavelength range.

Couplers are highly efficient in splitting light with little loss, about 0.2dB per joint, but incur significant losses when combining lights; for example, a 50/50 coupler produces a 50% loss to each beam when combined. For beam-combining applications, search Combiner.

Features

- Wavelength Independent
- Low Insertion Loss
- Low PDL
- Highly Stable & Reliable
- Ultra Low Cost

Applications

- Sensor
- Lasers
- Medical

Specifications

Parameter		Min	Typical		Max	Unit
Splitting Ratio			5/95 to 50/50			
Core Size			400			µm
Central Wavelength			450/550/650/850/1310			nm
Bandwidth			± 20			nm
			Premium	**Grade A**		
Excess Loss [1]			0.37	0.45		dB
Insertion Loss [1]	50/50		3.6/3.8	3.8/3.8		dB
	40/60		4.6/2.6	5.0/3.0		dB
	30/70		5.9/1.9	6.3/2.3		dB
	20/80		7.8/1.2	8.3/1.7		dB
	10/90		11.2/0.7	12.0/1.2		dB
	5/95		15.0/0.5	16.0/0.8		dB
Uniformity [1]			1	1.2		dB
Optical Power Handling			8			W
Operating Temperature		-40			85	°C
Storage Temperature		-50			85	°C
Package		900um loose tube: (ø)3.9x(L)70				

Notes:
[1]. * The value is also related to the multimode filling ratio. This vale is for CPR =14

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

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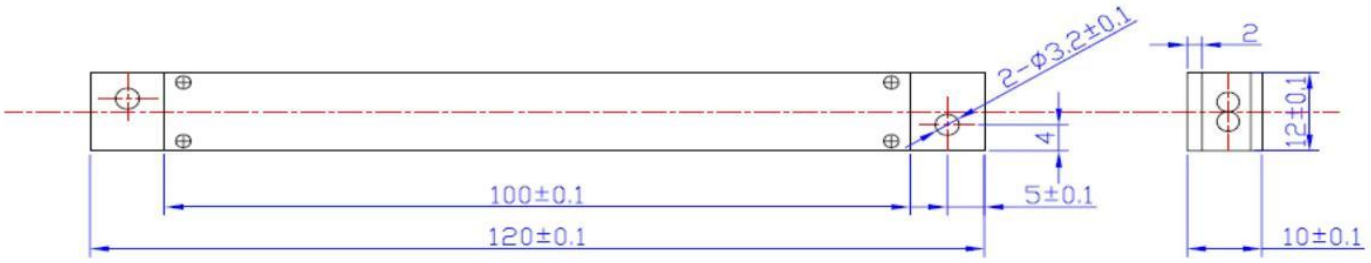
Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information (Part Number)

	☐	☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Port**	**Wavelength**	**Power**	**Package**	**Splitting Ratio**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector[2]**
FCLC-	1x2 = 1 2x2 = 2	1310nm = 7 850nm = 8 650nm = 6 550nm = 5 450nm = 4 Special = 0	1W = 1 5W = 5 10W = A 50W = B 100W = C 200W = D 300W = E 500W = F 700 W = G 1000W = H	70(L) = 2 Aerospace [1] = A Special = 0	50/50 = 1 05/95 = 3 10/90 = 4 20/80 = 5 30/70 = 6 40/60 = 7 Special = 0	NA0.22 = 4	900um tube = 2 Special = 0	0.5m = 1 0.75m = 2 1.0m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 ST = 8 LC/UPC = U Special = 0

[1]. Aerospace-grade package featuring an aluminum metal casing filled with a specially formulated RTV compound that is both vibration-resistant and thermally conductive, specifically designed to endure repeated thermal shock cycles from -45°C to 90°C.
[2]. The connector cannot be installed directly onto bare fiber, as it is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer can remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SM28 fiber and decreases further with smaller core fibers.

Application Notes

Fiber Core Alignment
Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness
Fibers with smaller core diameters (<5 µm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power
Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

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